

secrete excessive amounts of hormone despite normocalcemia, and if hypocalcemia develops again these huge glands secrete much more hormone than normal for any given degree of hypocalcemia. It is probable that true autonomy of the parathyroid glands does not exist in chronic renal failure, the apparent autonomy being simply the result of the mass of secreting parathyroid tissue.⁶ However, when this "autonomous" state does exist almost all forms of therapy, short of subtotal or total parathyroidectomy, may either aggravate the bone disease or decidedly increase soft tissue calcification. We are then confronted with the complete picture of severe sustained secondary hyperparathyroidism in chronic renal failure—that is (1) serum calcium usually normal, rarely elevated; (2) hypercalcemia after phosphate restriction; (3) hyperphosphatemia, which may respond poorly to phosphate restriction or hemodialysis; (4) osteitis fibrosa or subperiosteal bone resorption; (5) soft tissue calcification; (6) increased calcium content of skin; (7) pruritus unresponsive to adequate dialysis; (8) postdialysis diffusible or ionized calcium in serum greater than its concentration in the dialysate; (9) elevated alkaline phosphatase, or (10) bone pain (uncommon).⁶

It was pleasant to note Dr. Muldowney's discussion of magnesium depletion in humans and its possible role in impairing the end organ response to parathyroid hormone, and the ability of mild hypermagnesemia to inhibit parathyroid secretion.⁷ While we have stressed the role of the vitamin D resistant state as the fundamental "lesion" contributing to the early over-activity of the parathyroid gland, it is possible that magnesium deficiency could have the same result.

It is clear from Dr. Muldowney's and the present discussion that the clinician confronted with a disordered divalent ion metabolism and bone disease in chronic renal failure must make the most critical evaluation before proceeding with any specific form of therapy. One approach may improve a given biochemical abnormality while leading to a further deterioration of the skeleton or more soft tissue calcification.

As in all research or clinical investigation, as an increased number of clinicians and investigators become involved in gathering data and searching for the correct answers, the contributions increase in a geometric manner and it is that we are now at this phase. It seems likely that the most

important answers with respect to the pathogenesis, diagnosis and treatment of these serious disorders will be available to us very soon.

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REFERENCES

1. Garner, A., and Ball, J.: Quantitative observations in mineralized bone in chronic renal azotemia and intestinal malabsorption syndrome, *J. Pathol. Bacteriol.*, 9:545-593, 1966.
2. Kleeman, C. R., Better, O., Massry, S. G., and Maxwell, M. H.: Divalent ion metabolism and osteodystrophy in chronic renal failure, *Yale J. Biol. and Med.*, 40:1-45, 1967.
3. Friis, T., Hahneemann, S., and Weeke, E.: Serum calcium and serum phosphorus in uremia during administration of sodium phytate and aluminum hydroxide, *Acta. Med. Scand.*, 183:497-505, 1968.
4. Reiss, E., Canterbury, J. M., and Bilinsky, R. T.: Measurement of serum parathyroid hormone in renal insufficiency, *Trans. Assn. Amer. Physicians*, 81:104-114, 1968.
5. Harrison, H. E.: Parathyroid hormone and vitamin D, *Yale J. Biol. & Med.*, 38:393-409, 1966.
6. Massry, S. G., Coburn, J. W., Popovtzer, M. M., Shinaberger, J. H., Maxwell, M. H., and Kleeman, C. R.: The clinical spectrum of secondary hyperparathyroidism in chronic renal failure, during chronic hemodialysis, and after renal transplantation, *Arch. Int. Med.* (In Press).
7. Massry, S. G., Coburn, J. W., Chapman, L. W., and Kleeman, C. R.: Suppression of parathyroid activity by magnesium infusion, *J. Clin. Invest.*, 47:66a, 1968.

Medicine and the New Human Condition

THE HUMAN CONDITION seems to be undergoing a change. The cause is easy to understand. The energy of man's machines is doing much of the work which used to require his muscles, and a lot more. This has happened only recently. The result seems certain to be a truly new human condition to which human beings must adjust.

A curious paradox has developed which may be one of the root causes of many present day tensions. On the one hand inanimate power has reduced the need for human or even animal labor. Leisure has increased and affluence is unprecedented. A new expectation, even a demand for the opportunity of self-expression and individual fulfillment has become an insistent force in our society. There is real restiveness when these expectations and demands are not instantly met. On the other hand the refinements of scientific and technologic progress which make this very human dream seem so close to attainable exact their price. The more it frees of man's time, muscle

and intellect the more it demands from him of collaboration, coordination, planning, regulation and even control if the complex technologic society which permits of this new freedom is to improve rather than destroy the quality of human life.

This paradox of the new human condition is clearly seen in health care. Scientific achievement and the expectation of even greater technologic progress have led to upgrading of the very idea of health until now it is becoming viewed as a state of well-being, even of personal fulfillment, rather than simply the absence of disease. And the more successful the health care system becomes the greater are the problems, the expectations, the complexity of the services, the higher the costs, and the more of organization, regulation and control that is required. And again, accompanying this technologic progress there is destined to be increasing human dependence, dissatisfaction and even restiveness. It seems that this paradox is real and that it will be an important characteristic

of the human condition for the foreseeable future.

In a very real sense this is as much a biological phenomenon as it is anything else. Individual fulfillment is a biologically sound concept. It is an idea physicians can understand and accept. It is as old as the healing arts. And so is the paradox which now plagues the human condition. The health and well-being of anyone has always depended upon one's satisfactory adjustment within one's constraints, be they physical, emotional, social, economic, cultural or even political. Physicians have always sought to restore and maintain health and well-being within this framework. Diagnosis, treatment, prevention and rehabilitation are the tools a physician uses to improve this adjustment, whether by strengthening the individual, manipulating the environment or improving the character of the adjustment. This is the realm of medicine which must now develop its technology to deal with the new human condition much as it has with the old.

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